CONCEPT MAPPING AS A SUPPORT FOR MARS LANDING-SITE SELECTION Nathalie A. Cabrol[1,2] and Geoffrey A. Briggs[2]. [1]NASA Ames Research Center, Space Science Division. MS 245-3; [2] NASA Ames Center for Mars Exploration, MS 239-20, Moffett Field, CA 94035-1000. Email:ncabrol@mail.arc.nasa.

Introduction: The NASA Ames' Center for Mars Exploration (CMEX) serves to coordinate Mars programmatic research at ARC in the sciences, in information technology and in aero-assist and other technologies.

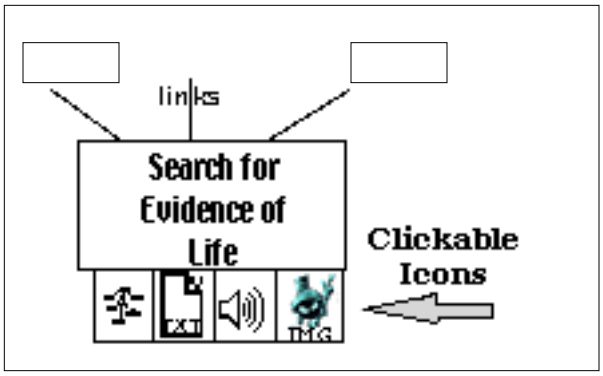
Most recently, CMEX has been working with the Institute for Human and Machine Cognition at the University of West Florida to develop a new kind of web browser based on the application of concept maps. These Cmaps, which are demonstrably effective in science teaching, can be used to provide a new kind of information navigation tool that can make web or CD based information more meaningful and more easily navigable. CMEX expects that its 1999 CD-ROM will have this new user interface.

CMEX is also engaged with the Mars Surveyor Project Office at JPL in developing an Internet-based source of materials to support the process of selecting landing sites for the next series of Mars landers. This activity -- identifying the most promising sites from which to return samples relevant to the search for evidence of life -- is one that is expected to engage the general public as well as the science community. To make the landing site data easily accessible and meaningful to the public, CMEX is planning to use the IHMC Cmap browser as its user interface.

What is a concept map? A concept map is a two-dimensional representation of a set of concepts constructed so that the inter-relationships among them are evident. The overall structure of a concept map constitutes a *hierarchical framework* for the concept included in it. All concepts at any levels in the hierarchy will tend to have similar degree of generality.

The Potential of "C-Maps": Concept maps are read from the top downwards as a series of linked propositions that, together, summarize a topic. Used as an information navigation tool, concept maps provide access to web-based information -- texts, images, audio, video, --.

The different icons associated with the concept boxes identify the nature of the information in question. By clicking on the icons, the reader will access texts and figures, images, videos, or deeper levels of concept map associated to the subject in question (see example in the figure).



Example of concept box associated with clickable icons that lead the reader to texts, images, videos, other concept map levels, etc. that will provide developed information on the subject described by the concept box.

Application to the Landing Site Selection: Concept maps can be used to present candidate-landing sites for the Surveyor Program and show how the proposed sites comply with the science objectives and the engineering constraints of the Surveyor Program. A first level map allows to make the reader acquainted with the most important criteria that demonstrate the importance of the proposed site. The links between boxes displaying the criteria should allow the reader to develop an idea about how these different criteria are related to each other, what are the strenghs and weaknesses, and the existing and missing data. In the end, the concept map will help the reader/reviewer to understand why it is important to take into consideration the site in question. In the future, it is expected that readers/reviewers could have access to "chat" links, where *pro* and *con* discussions concerning the proposed site will be possible. Finally, the concept mapping will provide a standard way to present the many sites proposed by the planetary science community with respecting the originality of each site and its potential. To demonstrate the potential of the "C-Maps", we propose to present the case of Gusev crater using this method.